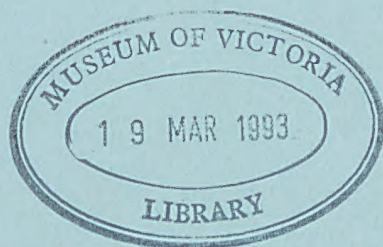


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GEELONG NATURALIST

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G.F.N.C.

P.O. Box 1047, Geelong

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EDITORIAL

Yet another wetland requires our concern. The Cheetham saltworks at Moolap ceased operations without warning on 11 November and the area's future is uncertain. We have been conducting wader and waterfowl counts there for more than ten years and results have shown that it is a wetland of international importance. Nearly one hundred and fifty species of bird visit the Moolap saltworks and Point Henry, an exceptional number considering how close they are to a large city. More than one per cent of the known Australian population of several wader species visit the area. It is a feeding and resting place for such waterbirds as Marsh Sandpipers, Banded Stilts, Chestnut breasted Shelducks, Grey and Lesser Golden Plover, Curlew and Sharp-tailed Sandpipers. Red-capped Plover, Black-winged Stilts and Red-necked Avocets breed there. Last winter's wader count (in the "off" season) totalled 941 birds.

There are reports that the saltworks might be put to agricultural use, that oyster farming could be established, that account will be taken of the wetland's significance. But we do not know for sure what will happen. The birds have been reliant on water movement through the lagoon system and without some water flow the ponds could become stagnant or gradually silt up.

Here is a wonderful opportunity for the Geelong Regional Commission, the Geelong City Council or some such body to preserve and manage the Moolap wetlands with sensitivity as a natural history "tourist" area. We do not necessarily need glitzy developments to attract tourist dollars. Many people (and I am one of them) travel long distances, even go overseas, to view birds in their natural habitat.

On a brighter note, we commend and support the South Barwon Council in its efforts to interpret through art the wetlands in its region. The Geelong Field Naturalists Club has provided much background material and is working with those involved in the "Art for the Barwon Wetlands" project. The December general meeting was devoted to wetlands and Council and Water Board representatives and the newly appointed artists-in-residence were invited to be present.

We look forward to seeing the results of the project.

Valda Dedman

NOTES ON THE HERPETOFAUNA OF THE INVERLEIGH COMMON FLORA RESERVE, VICTORIA.

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G.A. Baverstock, RMB 1350, Noyes Road,
LETHBRIDGE 3332.

INTRODUCTION

The Inverleigh Common Flora Reserve is an area of 1050 hectares of Manna Gum *Eucalyptus viminalis* and River Red Gum *E. camaldulensis* woodland occurring on sandy soils between 90 and 130 metres above sea level, near the townships of Inverleigh and Teesdale (38° 04'S 144° 02'E) in western Victoria. The authors have been conducting surveys and investigations of the Reserve's mammal fauna since 1978 (Conole & Baverstock 1983a, 1983b, 1985, in preparation - b), and during that time have also collected considerable non-systematic data on amphibians, reptiles and birds. This paper presents some casual observations over a period of 14 years on the amphibians and reptiles (herpetofauna) of the Inverleigh Common Flora Reserve, a species list, and some recommendations for future research in the area. The scientific nomenclature follows Cogger (1992), but the vernacular names are drawn from Coventry & Robertson (1991), Hero, Littlejohn & Marantelli (1991) and Wilson & Knowles (1992).

SPECIES LIST AND DISCUSSION

FAMILY HYLIDAE

1. *Litoria raniformis* Growling Grass Frog

Often also called the Green & Golden Bell Frog. Up until 1984/1985, we regularly recorded *L. raniformis* at the weir on Dam Track in the north-east of the Common, and in the dam adjacent to the Teesdale-Inverleigh Road near its intersection with Woolbrook Track. At the time of writing (October 1992) we have no evidence to suggest that *L. raniformis* remains extant at either location. After the heavy rains of late spring and summer however, one *L. raniformis* was heard at the Dam Track weir. *L. raniformis* usually occurs in and around very wet areas (Hero *et al* 1991), and in our experience usually in larger bodies of water such as permanent waterholes and the like. We have recorded two to three individuals in the large weir on

Old Shelford Road in the southern part of the Common (24-25 October 1992). The absence of this species for a period of years from the Dam Track weir could be explained by the fact that it does not hold permanent water, and that when water does collect there the amount is markedly less than a decade ago (water surface area in 1980 *circa* 20 x 30 metres *versus* about 1.5 x 5 metres in 1992). (The unusually heavy rains this year have filled this weir to the brim for the first time in our memories.) The absence of *L. raniformis* from the other site is less explicable as this is a permanent waterhole, except that it may add the suggestion by Hero *et al* (1991) and others that *L. raniformis* is a species in marked decline. The abundance of *L. raniformis* at the Common appears to have declined severely over the decade of the 1980's.

2. *Litoria ewingii* Southern Brown Tree Frog

This species is very widespread and is found in all areas of the Inverleigh Common. We have no measure of its abundance, but it can be heard at most times of the year in apparently similar numbers and is particularly vocal during and immediately after rainfall. Recently (5 September 1992), pairs of *L. ewingii* in amplexus including vigorously calling males were found along with similarly behaving Common Spadefoot Toads *Neobatrachus sudelli* in a puddle in the weir, but breeding of *L. ewingii* can occur throughout the year (Hero *et al* 1991).

FAMILY MYOBATRACHIDAE

3. *Crinia signifera* Common Froglet

C. signifera occurs abundantly and widely over the Common, and it can be heard all year round. Massed choruses are characteristic of spring and summer.

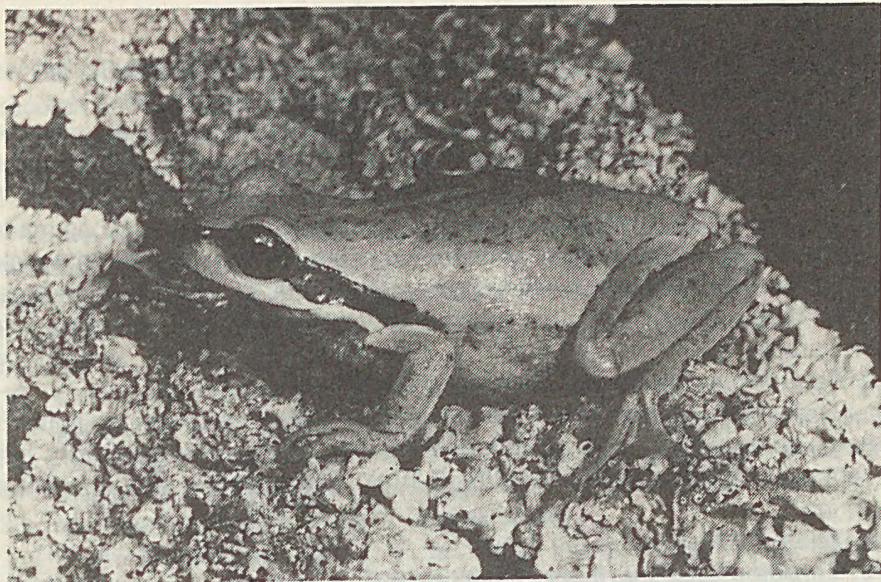
4. *Limnodynastes dumerillii* Pobblebonk Frog

This species occurs widely over the Common, and is often encountered far from any surface water, particularly at night during spotlight surveys after or during rain. We have no measure of its abundance, but subjectively it appears intermediate between its congeners, the very numerous Spotted Marsh Frog *L. tasmaniensis* and the uncommon Striped Marsh Frog *L. peronii*.

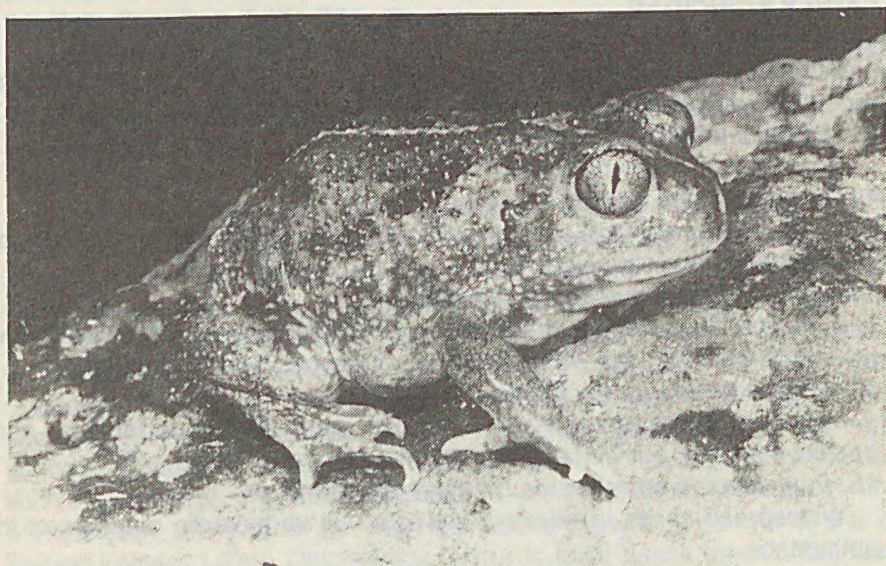
5. *Limnodynastes tasmaniensis* Spotted Marsh Frog

L. tasmaniensis is widespread on the Inverleigh Common, but it is more localised to waterlogged sites and surface water than *L. dumerillii*. It appears the most locally abundant of the *Limnodynastes* species. Egg masses found at the weir on 19 September 1992 are attributable to this species, and males were still calling at the site.

6. *Limnodynastes peronii* Striped Marsh Frog



Southern Brown Tree Frog Litoria ewingii.
Photographed at Cressy by Lawrie Conole



Common Spadefoot Toad Neobatrachus sudelli breeding male.
Photographed at Lethbridge by Lawrie Conole.

We have very little information on *L. peronii* at the Common, but we have recorded it widely there. It appears to be locally uncommon.

7. *Neobatrachus sudelli* Common Spadefoot Toad

N. sudelli occurs throughout the Inverleigh Common, and appears to be of similar abundance to *L. dumerilii*. Breeding activity was noted on 5 September 1992, as discussed under *L. ewingii*. Some observations made by the authors at Inverleigh Common and nearby areas suggests that male advertisement calling in *N. sudelli* coincides with a full moon, and at other times they are completely or predominantly silent (Conole & Baverstock in preparation -a).

8. *Pseudophryne bibronii* Bibron's Toadlet

This cyptic species occurs widely on the Inverleigh Common, but we have no measure of its abundance. Usually *P. bibronii* calls from late summer through autumn (Hero *et al* 1991), but we have also heard it in spring.

FAMILY AGAMIDAE

9. *Amphibolurus muricatus* Jacky Lizard

This common small dragon occurs widely on the Common, but we have no measure of its abundance.

FAMILY SCINCIDAE

10. *Bassiana duperreyi* (Eastern) Three-lined Skink

B. duperreyi was formerly known as *Leiopisma trilineata*, and occurs widely at the Common. We have no measure of its abundance.

11. *Egernia whitii* White's Skink

Distribution and abundance as for 9 and 10.

12. *Lampropholis delicata* Skink

We have recorded this species on the Common, but have no measure of its abundance or distribution.

13. *Lampropholis guichenoti* Garden Skink

L. guichenoti is the most frequently encountered species of reptile on the Inverleigh Common, but we have no rigorous measure of its abundance.

14. *Lerista bougainvillii* Skink

This fossorial species is occasionally encountered under logs and derelict car parts, but we have no measure of its abundance.

15. *Pseudemoia entrecasteauxii* Tussock Skink

Widespread at the Inverleigh Common, but we have no measure of its abundance.

16. *Saproscincus mustelinus* Weasel Skink

We have one record of *S. mustelinus* at the weir in 1978, but no further records or information about the species at the Common.

We have one record of *S. mustelinus* at the weir in 1978, but no further records or information about the species at the Common.

17. *Tiliqua nigrolutea* Blotched Blue-tongued Lizard

18. *Tiliqua scincoides* Common Blue-tongued Lizard

The *Tiliqua* species are infrequently encountered at the Common, and we have no measures of their abundance or distribution. These animals are commonly collected as pets, and this may explain their apparent local scarcity in an area which is steadily being encroached upon by the semi-rural suburbia of Inverleigh and Teesdale.

FAMILY ELAPIDAE

19. *Austrelaps superbus* Copperhead

Snakes are rarely encountered at the Inverleigh Common, and we only have one record of *A. superbus* at the weir in 1978, and one at Intersection of Picnic Track and Teesdale – Inverleigh Road on 29.12.1992.

20. *Pseudonaja textilis* Eastern Brown Snake

The few records we have of *P. textilis* at the Inverleigh Common are mostly of nocturnally active individuals during summer months. Although *P. textilis* occurs widely at the Common, we have no measure of its abundance.

21. *Suta flagellum* Little Whip Snake

One individual found under a log in *E. viminalis* woodlands on high ground overlooking an inundated *E. camaldulensis* woodland near Reedy Track on 24 October 1992. We have no other data on its occurrence at the Inverleigh Common.

CONCLUSION

There are a number of species recorded in nearby areas but not at the Inverleigh Common which could be reasonably expected to be found there. The Common Tiger Snake *Notechis scutatus* occurs along the Native Hut Creek, Barwon and Leigh Rivers (Conole & Baverstock unpubl. data). The White-lipped Snake *Drysdalia coronoides* is found widely in the greater Geelong area (Conole & Baverstock unpubl. data), and although more restricted, the Eastern Small-eyed Snake *Rhinoplocephalus nigrescens* and Red-bellied Black Snake *Pseudechis porphyriacus* occur in the area (Conole 1985). One of the blind snakes of humid or sub-humid distribution such as *Ramphotyphlops nigrescens* or *R. proximus* could occur (Coventry & Robertson 1991). Both the Marbled Gecko *Christinus marmoratus* and Striped Legless Lizard *Delma impar* occur in local basalt grasslands, and could occur marginally on the Common.

Of the 21 species of amphibians and reptiles recorded by the authors at the Inverleigh Common Flora Reserve, none have sufficient data available

to ascertain their local conservation status. This is a consequence of these observations being collected in a non-systematic manner as casual records whilst undertaking other activities. We hope that our casual observations and general impressions will form the basis of more issues specific investigations in the future, and perhaps will stimulate interest in the need for a systematic herpetological study.

Our work on mammals has produced results to show at least one formerly abundant and widespread species, the Common Ringtail Possum *Pseudocheirus*, has declined at the Common over the last decade, and may now be in danger of local extinction (Conole & Baverstock in preparation - b). The Brown and White-throated Treecreepers *Climactens picumnus* and *C. leucophaea* are seriously threatened in the reserve too (Conole unpubl data). This together with the decline of another formerly abundant and widespread species, the Growling Grass Frog *Litoria raniformis*, indicates that some endangering processes are out of control at the Common. The nature of the endangering process for *L. raniformis* is unclear, but may be larger than a localised issue. Change in vegetation structure and floristics are probably implicated in the decline of mammal and bird species at the Common (Conole & Baverstock in preparation). The apparent paucity of elapid snakes and the decline of *L. raniformis* may not be coincidental as both are major predators of smaller frogs. The endangering process may be related to the position of elapid snakes and *L. raniformis* as higher order predators above smaller frogs, but it is beyond the scope of this observational note to discuss these issues any further.

Important priorities for management of herpetofauna biodiversity at the Inverleigh Common Flora Reserve include the following:

- (i) systematic herpetological survey,
- (ii) long term monitoring of frog population trends,
- (iii) autecological studies of rare and/or threatened species.

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BOUNTIFUL BORNEO

An illustrated talk presented by Dr. Jim Willis at the general meeting of GFNC Inc. on Tues. 2nd June 1992

The club was proud to have Jim and Mavis Willis who are fellow members of the club at the meeting.

INTRODUCTION

Jim gave an enthralling account of an inexpensive 18 day trip to the Malaysian states of Sarawak and Sabah in Sept. 1990 when he travelled with a group of 21 people from "The Friends of the Royal Botanic Gardens, Melbourne".

Borneo is the third largest island in the world; it consists of the Indonesian State of Kalimantan (about 75%), the Malaysian-owned Sarawak and Sabah (about 25%) and the small independent sultanate of Brunei sandwiched between them

The party flew from Melbourne to Kuala Lumpur and then to Kuching, the capital city of Sarawak in Western Borneo.

There are still vast forests in Borneo and considerable national parks. The population of the two Malaysian states is about 2.7 million. Almost half the population of N.W.Borneo is Chinese, many of these being descendents of laborers who worked for the British on plantations producing mainly rubber, oil palm and pepper. After British control ended in the 1960's the Chinese remained and now control most businesses in the country. About 35% of the population are Malaysian and belong to the Muslim faith, as evidenced by large mosques which are characteristic of the settlements in Sarawak and Sabah. More than 10% are Iban, which is the chief native tribe occupying the more hilly parts. In addition there are minority groups including British, German, Indian residents and various small mountain tribes having distinctive languages.

PART 1. SARAWAK

In Kuching the party was placed in the capable hands of Michael, a good-humoured native tour-guide of jungle origin. His duties also included cooking and serving meals for the visitors, and his more recent ancestors included headhunters! Michael spoke half a dozen languages fluently but when we asked if he spoke French for the benefit of some Belgians, Michael replied "No, but I address them in English with a French accent"!

Kuching has a population of some 300,000 and is growing apace. The party stayed at the "Holiday Inn" which overlooked the tidal Sarawak

River. Houses on the opposite bank were raised up on piles to keep them above flood level.

The name Kuching means "cat" and there was a marvellous cat exhibition in the art museum, consisting of porcelain, metal, wood carvings, drawings and books. Interesting slides were shown of Kuching, including Chinese temples and a large Mohammedan mosque with a burial mound on the adjoining hillside (elaborate grottos for the local nobility and slate monuments for poorer people).

In the nearby Semonggok Rain Forest was a reserve where Jim saw many varieties of tall trees comprising roughly equal numbers of *Dipterocarpus* and *Shorea*. These are the main timber trees and have slight buttresses. Identification of individual species was somewhat difficult without studying details of buds, leaves and fruit capsules etc.

One slide showed a live corkscrew-shaped vine that had once coiled around a sapling, the latter long since dead and fallen apart. A Pagoda Flower (*Clerodendrum paniculatum* of the Verbenaceae family) was shown with its ruby red buds and pink flowers.

A local reserve was used as a rehabilitation centre for nursing orphaned or sick orang-utans. These animals are helpless until about two years old and are very affectionate.

Early the next day the party set out for the Skrang River which is about 100km from Kuching. Along the roadside there were numerous excitements including pitcher plants, bamboo orchids (growing on a tall cane with scattered leaves and large pink butterfly-like flowers), also a mauve-flowered lasiandra (*Melastoma denticulatum*) which extends to Indonesia and even coastal regions of Queensland and northern NSW.

Outside the pepper plantations some exotic plants are grown, e.g. *Mussaenda* in the coffee family - a cultivar named after Queen Sirikit of Thailand.

At Serian the party found it necessary to combat the hot tropical conditions by purchasing straw hats and wearing a minimum of light cotton clothing which was washed and dried under the air-conditioning of hotel rooms overnight. Chinese tradespeople are very neat and tidy and Jim was impressed by the rear of shops which were decorated with potted plants growing in window boxes and along balconies.

On the way to the Skrang river the party observed an example of a typical pepper plantation where the climbing plants are grown on poles in a manner similar to hops. The dark red berries yield black pepper from the outside skin and white pepper from the kernels. After about 5 years the pepper yield starts to fall and new vines are planted to replace the old ones.

The party slept in bunks in a typical "long house" which consisted of a number of cubicles each housing a family. The dwelling was built on piles. The locals merely slept on a rush mat on the floor. Food for the community was housed in little houses above and included pigs, ducks, and chickens. The local people performed ceremonial dances for the guests; musical accompaniment was provided by two people beating cymbals - metal drums fitted into a hollow log for resonance. Traditional hornbill feathers were worn by the dancers. After the evening meal there was a further dancing display in the whole long house at which gifts from the visitors were placed in a pile and offered to the head-man. At the end of each dance, hands were shaken and guests were offered a thimbleful of rather potent rice wine.

The following day a river trip was taken in a number of motorised canoes steered by pole-men. Each canoe carried about 5 persons. On the way to inspect a long house, Jim described the wonderful carpet of sedge turf (*Eleocharis retroflexa*) growing on the sandy frontage of the river. A slide was shown of one of the many local species of fig. This one had very large leaves (to 1000 sq.cm.).

The party climbed up into this long house via a steep pole in which deep notches had been cut to act as a grip. In previous times the ladder would have been pulled up at night to protect occupants from possible headhunting raids. The ridge pole of the building was still decorated by human skulls, the trophies of a chase from long ago!

At Bako National Park, near Kuching, Jim observed the Nipa Palm with its very ornate chocolate-brown fruits. It seems intermediate between the *Pandanus* spp. and the true palms, but it belongs to the family *Arecaceae*. At the park headquarters the party stayed in some basic overnight accommodation with simple verandahs where dining took place and cubicles to the rear for sleeping. Monkeys would peep over the verandah roof to see what food was available and then help themselves to any unguarded morsel.

To reach the northern beaches and fascinating heathland vegetation between, the party followed on a raised walkway above mangrove swamps. The chief mangrove was a species of *Sonneratia*. Jim observed Fiddler crabs where the male crab has one large claw which is waved around like a semaphore to distract other males and to carry on his courtship display with females of the species.

On the coast at Telok Pandan Kecil Bay were large trees of *Casuarina equestifolia*, also smaller ones of the large-fruited *C. sumatrana*. Here was a delightful beach with lukewarm water and little islands.

The water was very safe for bathing and there appeared to be no dangerous sea creatures in this part of the South China Sea.

In the nearby heathland grew abundant *Baeckea frutescens* and a number of orchids including *Coelogyne* spp. growing on mossy trunks. Trees in a nearby forest were covered in ant-house plants (*Myrmecodia*) which have swollen prickly stems clinging to a tree for support. The whole of the interior is a mass of interlacing tunnels which provide security for the ants and ant food from their tissues. Jim described the protective ants as "red-hot furies" which can be quite irritating if disturbed. There was another type of ant-house plant (*Dischidia* sp.) which had specialised swollen leaves, hollowed out and occupied by different tiny ants.

Six or seven species of pitcher plant were seen. *Nepenthes gracilis* with its narrow green pitchers (7-14 cm long) climbs up to the tops of tall trees. Another spectacular plant (*N. rafflesiana*) grows close to the ground and has red-rimmed pitchers containing digestive fluid to drown insects; a sweet substance is exuded, attracting insects which then fall into the fluid, are drowned and digested as a reserve of nitrogenous food. In some of the larger pitchers (e.g. *Nepenthes rajah*), which may hold up to a litre of fluid, it is possible for mice and rats to be drowned. A favourite species with Jim's group hugged the ground, with short crowded pitchers resembling the jars of "Ali Baba" (*Nepenthes ampullaria*). A number of club-mosses were observed (e.g. *Lycopodium cernuum*, the nodding clubmoss); it is also native to N.E. Australia and N.Z. These have spore bearing cones which nod down like pendants.

A slide was shown of a very large-leaved palm (*Johannas-Teysmannia altifrons*). This plant has undivided leaves and was described by Jim as looking like "the biggest aspidistra in the world" (quoting Gracie Fields). There was a truly silver plant. its rosetted leaves gleaming from silvery hairs, with a small violet-like flower on a slender stalk. This plant grows in very dark shady places and is related to the African Violet (family *Gesneriaceae*).

To improve fitness, as a procurer for the forthcoming mountain-climbing in Sabah, six of the visitors, including Jim, spent a day's walking at Bako. Wonderful cascades of water were witnessed and Jim commented on the pollution - free water available in Sarawak and how safe it was to drink even from roadside rain-puddles.

The party then flew from Kuching to Miri, the northern-most town of Sarawak, en route to the Niah Caves National Park. The party drove through a monoculture of oil palm plantations. The nuts of this West African palm are borne constantly from about 5 years of age, but their yield



Johannis – *Teysmannia altifrons*. Bako National Park, Sarawak Trail.
Photo: Jim Willis.

becomes uneconomic when plants get too tall to harvest the nuts; plants are then replaced with younger ones.

At Niah National Park the group used a board-walk above the mushy jungle floor and saw a fairyland of epiphytic ferns, mosses and lichens covering the trunks of Dipterocarp trees. Armed with torches they explored one of the many caves formed within gigantic limestone cliffs. The cave floor was deep in bat manure; occasionally a rock fall would allow shafts of daylight to penetrate the prevailing darkness. Edible nests of three kinds of cave swiftlets are allowed to be harvested at certain times of the year. Jim saw nest collectors, with lights attached under a headband, using knives to prize nests from the roof of the cave whilst clinging to the top of 100ft bamboo poles (constructed by lashing shorter lengths together). There had been ten fatalities from falling that season so far! Soup is made from these nests which are composed of a jelly of regurgitated seaweed and saliva. The colour of the nests may be black, yellow or white. The latter can fetch a price in the order of \$2000 per kilogram equivalent to several years' wages for a Chinese worker, so they are willing to risk their lives in collecting such bird-nests. The swiftlets use echo-location to guide themselves unerringly through the vast lightless caverns.

PART 2 SABAH

The party next flew to Kota Kinabula, capital of Sabah State, and stayed at the Hyatt Hotel. This city is smaller than Kuching and has a lovely museum, beaches of coral sand and an off-shore archipelago. The party made an all-day trip to Sapi Island which is part of the Tunku Abdul Rahman National Park. Beautiful tropical reef fish are caught and supplied to local hotels and consumed at almost every meal. The party passed villages on stilts built over the water, inhabited by friendly waving Philippine islanders. These people are not allowed to own Malaysian land but may live rent free over the water where they catch and feed on fish, crabs and molluscs.

On Sapi Island some of the party spent their time swimming, snorkelling, and resting under the shade of Tamarind trees; others including Jim preferred to walk around the island. There were beautiful white beaches of coral sand and rock formations including a tessellated pavement which was similar to the formation at Eaglehawk Neck in Tasmania.

Hanging like a coronet beneath the head of coarse fronds on *Cycas rumphii*, were big naked seeds, each of hen's egg size. On the hillside track, the walking party saw masses of beautiful coral fern, *Dicranopteris linearis*. It is an abundant fern which occurs throughout Borneo, Indonesia and Papua New Guinea, also in tropical Australia.

Friends of Melbourne Botanic Gardens next went by bus to the Kinabalu National Park headquarters at some 5000 ft altitude. As aerial view of Mount Kinabalu rising from the jungle base was shown. The mountain is a lump of granite only about one million years old which is very young in geological terms. Among the myriad plants observed were slender tree ferns with the peculiar name of *Cyathea contaminans*. At Park H.Q. a dazzling red introduced Balsam grew in beds; the abundant native *Impatiens platypetala* differed in its deep notch at the end of each mauve petal.

In a miniature botanical garden at the H.Q. were samples of labelled local plants from the mount. These included *Medinilla* species (of the lasiandra family), one with big ribbed leaves and a beautiful drooping coral-like inflorescence. Pitcher plants on show included a dull brown species (*Nepenthes fusca*) and *Nepenthes lowii* with large pitcher resembling a toilet pedestal; this plant was named after explorer Hugh Low (a British official on the island of Labuan) who in March 1851 was the first person to climb Mt. Kinabalu. Several other plants that are endemic on the mountain also bear his name and were recorded at Kew Gardens in England.

The climb up Mount Kinabalu and back was tackled by Jim and 5 others in just two days, which made it rather rushed. The climb often consisted of a series of stairways and notched log ladders. The guide Richard, a Kadazan Christian who had been educated in a Roman Catholic Mission, knew the local names of plants and Jim was able to give him some botanical equivalents which he entered into his notebook for future reference. Each person also had a porter to carry haversacks containing any essentials.

Above 6000 feet the steaming tropical jungle gradually gave way to a temperate Dipterocarp forest, followed by Oak forest and then a region of elfin wood where many of the local plants genera were allied to Australian ones. These included two *Leptospermum* and two *Leucopogon* species, as well as members of *Dianella*, *Gahnia*, *Coprosma*, *Euphrasia* and *Tasmannia*.

After an evening stop in the Laban Rata Lodge (at 11,000 ft.) the final climb to the 13,455 ft. summit was commenced at 2-15 a.m. by torchlight - in order to see sunrise from the summit. Some 30,000 people climb the mountain every year. The summit of Mt. Kinabalu is the first part of Asia daily to receive the initial rays of sunlight at dawn. The uppermost hut on the mountain is called Sayat Sayat, the local name for the tea-tree (*Leptospermum recurvum*). The climbers had to hang on to a torch in one hand and a slippery rope in the other as they hauled themselves up over



Nepenthes lowii. Mt. Kinabalu, Sabah. Borneo. Photo: Jim Willis.

great granite boulders and stairways. Indemnity forms had to be signed by the travellers to free the Malaysian government of responsibility for possible accidents. From the summit was a view of an almost sheer drop of some 2000 ft. to Low's Valley. The party was extremely fortunate to avoid rain and have clear visibility to view the sunrise from the summit.

Jim explained that there was an enormous diversity of flora in this national park and surrounding region (e.g. 1200 species of orchid). Mountain plants included *Schima brevifolia* (with coral red buds and rose-like white flowers), two species of thornless brambles, *Rubus lineatus* with a silky pleated leaf and *Rubus lowii* (raspberry-type of edible fruit). Other plants at 9,000 - 11,000 ft. were *Coprosma hookeri* (sparse leaves and large red berries), *Euphrasia borneensis* and *Leucopogon suaveolens* which is closely related to the Australian alpine species *L. hookeri*. There were numerous orchids, e.g. *Coelogyne* sp. with large plantain-like leaves and ivory-coloured flowers and one of the many *Habenaria* species which are terrestrial. A slide was shown of *Nepenthes villosa*, the downy pitcher plant with its very large red pitchers.

There are 23 species of Rhododendron on and around the mountain, the commonest being *R. ericoides* with tiny heathlike leaves and orange-red flowers looking like correa bells. *R. buxifolia* was seen growing from a crack in a granite rock near the summit with tiny box like leaves and large flowers. There was also *R. rugosum* with trusses of cerise-coloured flowers and *R. lowii* bearing large trusses of apricot-coloured flowers. Colourful blood-red foliage was a feature of young growth on the box-like heath *Vaccinium stapfianum*. A coarse water-fern appeared to be identical with *Blechnum wattsii* which occurs in Victoria. There were numerous mosses and lichens festooning trunks and dripping rock faces, not to mention fungi.

Jim said that descending the mountain was more tiring and hazardous than climbing up; it caused considerable strain of calf muscles and knees. A Kadazan wayside stall later enabled purchase of vegetables and tropical fruit, especially cheap delicious bananas.

Next day on the other side of the mountain, a visit was made to the Poring Springs Reserve. Almost boiling spring water emerges and cools down as it flows through the valley. Some people bathed in the cement troughs which had been constructed by the Japanese during World War 2. Here the party undertook a "canopy walk" along precarious swing bridges stretched between the tops of rain forest trees.

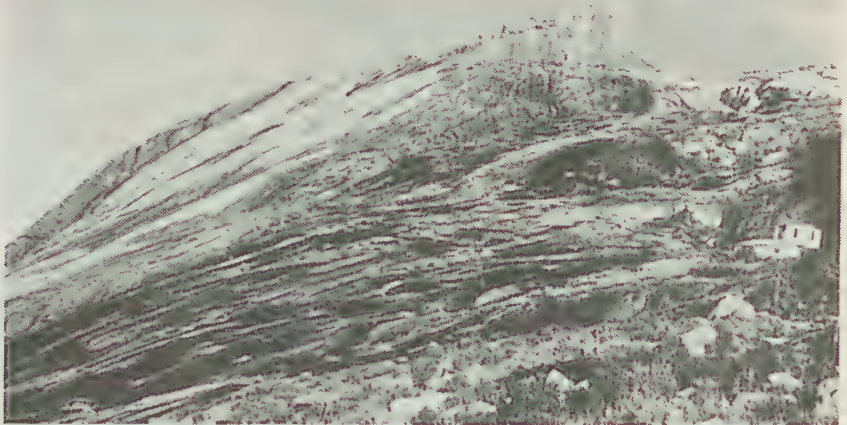
Then it was a journey through cleared mountain ranges to the settlement of Tenom where there is a large agricultural research station. The manager, Tony Lamb, was the only European still left in the agricultural

services; he was in charge of the Orchid Centre where 500 species of orchid are growing, about 30-40 species being in flower at any one time. One shown on a slide was the magnificent *Calanthe triplicata* which occurs throughout Papua New Guinea and down along the East Australian coast. There was also *Phalaenopsis gigantea* with a few enormous leaves and tiger-striped flowers. One of the local *Vanda* species had very large orange flowers with beautiful dark brown bars and spots. Other plants included some exotics including *Heliconia rostrata* from Central America, having large banana-like leaves and pendulous trusses of scarlet flowers with curved yellow tips.

This trip to Borneo ended with the only train journey available on the island - two-and-a-half hours of a somewhat uncomfortable ride, complete with belching diesel fumes! The railway goes from Tenom to Beaufort through mountain gorges and dipterocarp forests, much of the way along the great roaring Padas River and within the large Crocker Range National Park.

Jim praised the efforts of Felix, their guide through Sabah, and was most impressed by the friendliness and hospitality of Borneo people. He recounted an incident where two tyres blew out in their vehicle and, whilst the group was temporarily stranded a local Malaysian lady spontaneously invited them in for refreshment and inspection of her garden.

Ian Woodland, who had visited Borneo some years ago, gave a vote of thanks to Jim Willis and this was carried with acclamation.



Mt. Kinabalu, Sabah, Borneo. Bare summit area above 13,000 ft. Sayat Sayat hut at right. Photo: Jim Willis.



Ladder of notched saplings. Photo: Jim Willis

POETIC JUSTICE

On August the 12th 1992, I was working with a partner on a construction site in Wantirna when a noise behind us caught our attention and, since we were working on a scissor lift some 40 feet off the ground, we had a good view of the events about to unfold. This noise caught our attention very quickly as it sounded like human baby in extreme pain, but when we turned we saw a female magpie, head down, tail slightly up and wings partly open.

She was, as it turned out, one tree over, some 20 ft (6m) from her nesting tree. As we watched a Little Raven hopped from a tree on the other side of the nest, down onto a horizontal branch and proceeded to casually hop to the centre of the foliage some 3 ft (900mm) from the top of this Cypress pine. We noticed that he did a turn-around and came out with something in his bill. Most likely an egg as the bill was quite open. All this time the female Magpie kept her pose, crying. As the raven moved to the end of the branch to make its escape, the adult male Magpie came into view.

We saw him almost land on the tree directly over the nest, but, just as his feet were about to touch he saw the raven and, still with the momentum, dived some 8-10 ft (2.4-3.0m) and struck the raven at the base of the skull, either killing it immediately or crippling it. Either way both Magpies proceeded to get on its back, and over its lifeless body jumped up and down, driving their bills deep into the back of this once cocky raven. This attack went on for between 2 and 3 minutes before they retreated, the female went to the nest and the male above on a branch.

Peter Coates
Drysedale

Gipsy Point Lodge



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For further details contact: Alan Robertson

Gipsy Point Lodge, Gipsy Point, Victoria 3891 Australia. Telephone: (051) 588205

TAKE ONLY PHOTOGRAPHS AND LEAVE ONLY FOOTPRINTS

By Fiona Cavanagh

Introduction

Minimum impact bushwalking, or MIB, should be understood and its guidelines followed by everyone. With the marked increase in the number of people visiting our wilderness areas we need to be extremely careful to minimise our impact on the bush so as to prevent us from "loving our wilderness to death". MIB is simply the process of going there without showing wear, taking care about where you walk and how you camp. These simple guidelines can be, and should be, followed by everyone.

MIB Hints - Equipment

There are number of things you can do to stop our wilderness from being damaged by overzealous walkers.

Before you leave for an extended stay in the bush make sure you have the following equipment;

- * A good , waterproof tent with a strong floor and aluminum or fibreglass tent poles. A tent with a floor will prevent any problems with water coming in and will make it unnecessary to dig a ditch around the tent. If you carry poles, there will be no need to cut young saplings to hold the tent up - this practice is illegal in National Parks.
- * Carry a sleeping mat or thermarest to lie on rather than cutting fern fronds, you will find it much warmer, and damaging any vegetation, bar weeds, is illegal in National Parks.
- * Always carry a lightweight fuel stove to cook in. This is a lot quicker and easier to use than trying to cook over the temperamental heat of a fire. Some areas especially in Tasmania have been declared fuel stove only areas and can occur a fine of up to \$5000 for lighting a campfire.
- * Also include a lightweight trowel for those all important trips to the toilet.
- * Footwear is very important for comfort, blisters being the most common bushwalker's complaint. Some sturdily constructed, worn-in boots with good ankle protection are a good idea for rocky, wet or rough areas, but runners are fine for wearing around the camp and on more gentle tracks.
- * Don't forget the rubbish bag to pack out all you pack in including organics such as orange peel and eggshells which take a long time to decompose.
- * Also, very important for your safety is a first aid kit and don't forget to let

someone know before you go. Fill out a trip intention form, available at most camping stores and police stations, and leave it with someone responsible.

MIB Hints - Track Notes

While you are on the track, whether it be for a week or an hour you should follow these guidelines so you leave only footprints.

- * When a large group, in untracked country spread out to minimise impact. If you only tread on a plant once it has a good chance of recovery.
- * If there are made tracks, use them. Follow them and do not cut corners as this leads to extensive erosion, in Yosemite NP this can incur an on the spot fine of \$50.
- * If the track does go through a muddy area splash right on through, don't go around as this leads to further track erosion and may cause the track to become so wide that navigation is difficult. In Tasmania, as in other areas, mud is inevitable, the bogs are infamous but unfortunately some tracks have ended up 20 metres wide because of people trying to avoid the mud. If you know the area you are going to is likely to be muddy make sure you wear boots, and gaiters if you have them.
- * When walking avoid standing on plants as much as possible. Especially look out for the stunted alpine plants and the soft vegetation such as moss and cushion plants as these take a long time to regrow. Trampling of vegetation especially in wetlands is devastating to ground-nesting birds and many other animals, so be careful.
- * Try to walk on hard well-worn ground or hop from rock to rock, if possible, to minimise impact.

MIB Hints - Camping and Campfires

- * When camping make sure the campsite you choose is hard and well worn or the next thing.
- * Leave no permanent reminders of your presence like cairns or shelters as these scar the landscape and detract the wilderness experience.
- * Try to avoid lighting campfires. Although they are traditional and morale boosting there is simply no place for them in alpine or rainforest areas where they heighten campsite impact. In both these areas wood can be hard to find and an escaped campfire is devastating. Never take wood from a standing tree living or dead unless in an emergency.
- * Although peat is not common on the mainland it is frequently found in Tasmania. It can be identified by its dark spongy texture due to the decomposed organic matter it contains. Fires should never ever be lit on peat, it can smoulder underground for months and burst into flames in the next hot weather. The practice is illegal and fines of up to \$1000 must be

paid.

* If you must light a fire keep it small and make sure the day is not too hot or windy. Ensure the soil is sandy or of mineral composition and there is an adequate wood supply. When finished with the fire, put it out with water not soil and make sure the ashes are cool underneath before leaving.

MIB Hints - The Toilet

Whilst camping in the bush you are going to need to go to the toilet. When you do so make sure you do correctly.

* If there is an established toilet, use it, if not

* Take your lightweight trowel and go 100 metres from the nearest campsite or watercourse.

* Dig a hole 15cm or 6 inches deep. Any deeper and the waste will be below the biological decomposing layer, and shallower and it may be uncovered.

* Bury waste and toilet paper with soil and wash hands away from any watercourses.

* To prevent the spread of gastroenteritis, symptomised by diarrhoea and vomiting, always boil water for at least 3 minutes and up to ten minutes in well used areas. This will kill all germs including Giardia, a dangerous bug which has been recorded in the Australian Alps.

MIB Hints - Miscellaneous

* When washing dishes go at least 50 m away from any watercourse and do not use soap. Use a scourer or sand and hot water, scatter waste water when finished.

* Always remember the obvious - pack out all rubbish packed in, including cigarette butts and silver paper. The old idea of "Burn Bash and Bury" no longer applies.

* Do not leave food around or put foodscraps in lakes or streams. This can lead to diseases in native animals, such as "Lumpy Jaw" or create animals which are dependent on the walkers' food, especially possums.

* It is unwise to have a large feed of blackberries before going on a walk and always be careful with the seeds of any foreign plant.

Finally, with a bit of care and effort we can all contribute to reducing the damage in our remaining beautiful and unique wilderness areas. The ideas given are simple and straightforward, they were not made to inconvenience you but rather to help protect our delicate environment. May we never love them to death.

Fiona Cavanagh
Woodlands Drive
Ocean Grove, 3226

EXCURSION TO BELMONT COMMON 20TH SEPTEMBER 1992

by Gordon McCarthy

The weather was reasonably kind, cool but no rain. We had a good roll-up of members plus several visiting families after lunch. 14 cars were counted at one stage.

Activity for the morning was the planting of 160 indigenous trees, supplied by Mark Trengrove, who had previously inspected the area. Stakes were already in place and surrounding weeds sprayed.

Trees planted were Silver Wattle *Acacia dealbata*, River Red Gum *Eucalyptus camaldulensis*, Tree Everlasting *Helichrysum dendroideum*, Woolly Teatree *Leptospermum lanigerum*.

After lunch the children present, accompanied by mums and dads, used dip nets to catch the local invertebrates. Unfortunately, owing to the high water levels, this proved difficult, but more luck was had in the drainage channel, with various species including water boatmen, water beetles, mosquito fish, blood worms, water fleas etc. being identified.

Three spiders were discovered by the children. One in the bird hide was the little blue and red *Nicodamus bicolor*. Also around the hide we caught a beautiful little green flower spider. Later on one keen-eyed lad found the odd bird-dropping Death's head or Orchard spider *Celaenia excavata*. Several patches of frog spawn were seen, mainly on the golf course side of the track, but the frogs themselves proved elusive.

Good numbers, 50 plus, of Latham's Snipe were flushed; other birds included 3 Royal Spoonbills, Black Ducks, Australian Grebes, Little Grassbirds carrying food, Cisticolas, Reed Warblers, White-Fronted Chats, Great Egrets, Swans with two cygnets, Yellow-rumped Thornbills, White-plumed Honeyeaters, plus the usual wetland dwellers - Moorhens, Coots, Swampheens and so on.

Despite the high water levels, it turned out to be a successful day.

Gordon McCarthy
26 Fairbrae Avenue
Belmont, 3216.

PROGRAM

MARCH

- 2 General meeting: "Waders Here & There" – Margaret Cameron
- 6/8 W.V.F.N.C.A. Campout: Timboon
- 9 Plant Group meeting: "West Otways Flora"
- 21 Excursion: Corio Bay & Pt. Henry East – Leaders: Pat Russell (Ph: 482734) & Paul Moore (Ph: 431869)
- 23 Bird Group meeting: "Bustards" Don White

APRIL

- 6 Annual General meeting: Members Night
- 13 Plant Group meeting: "Flora Reserve Management" – John Budd
- 18 Excursion: Burnley Horticultural College & Maranoa Gardens: Coach trip. Leader: Diana Primrose (Ph: 501811)
- 27 Bird Group meeting: "The Regent Honeyeater" – Don Franklin

MAY

- 4 General meeting: "Birds of Australia" – Ken Simpson
- 11 Plant Group meeting: "Indigenous Plant Research" – Ian Rogers.
- 16 Excursion: Brisbane Ranges. Leader: Craig Morley (Ph: 21 4604)
- 25 Bird Group meeting: Birding in Irian Jaya – Margaret Cameron

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